

WHAT IS CLAIMED IS:

1. A radio reception apparatus compatible with a plurality of modulation methods having different multi-value numbers, comprising:
 - a measuring unit measuring an error vector corresponding to a distance between an original symbol point of a received signal and an
 - 5 actually received symbol point on an IQ coordinate plane;
 - a comparing unit comparing said measured error vector with a prescribed threshold value; and
 - a modulation method switching unit switching the modulation method in accordance with result of comparison by said comparing unit.
2. The radio reception apparatus according to claim 1, wherein when a switching request is made during a communication in a first modulation method having a small multi-value number for switching to a second modulation method having a larger multi-value number and it is
- 5 determined by said comparing unit that said measured error vector is not larger than a prescribed first threshold value, said modulation method switching unit switches the modulation method from said first modulation method to said second modulation method, and when it is determined that said error vector is larger than said first threshold value, maintains said
- 10 first modulation method.
3. The radio reception apparatus according to claim 2, wherein said measuring unit detects other parameter for evaluating communication quality of a propagation path in addition to said error vector; and
- 5 said modulation method switching unit maintains said first modulation method when it is determined that said measured error vector is larger than said first threshold value, even when said detected parameter represents a relatively satisfactory communication quality.
4. The radio reception apparatus according to claim 1, wherein

when a request for interrupting communication through a propagation path because of degradation of communication quality is made during a communication in a second modulation method having a large multi-value number and it is determined by said comparing unit that said measured error vector is not larger than a prescribed second threshold value, the modulation method switching unit switches the modulation method from said second modulation method to a first modulation method having smaller multi-value number to maintain communication, and when it is determined that said error vector is larger than said second threshold value, interrupts communication through said propagation path.

5. The radio reception apparatus according to claim 4, wherein said measuring unit detects other parameter for evaluating communication quality of a propagation path in addition to said error vector; and
said modulation method switching unit interrupts communication through the propagation path when it is determined that said measured error vector is larger than said second threshold value, even when said detected parameter represents a relatively satisfactory communication quality.

6. The radio reception apparatus according to claim 1, further comprising
a reception processing unit performing a reception process of selecting or synthesizing said received signal; wherein
said measuring unit measures said error vector of the received signal that has been subjected to said reception process.

7. The radio reception apparatus according to claim 1, further comprising
an intra-frame averaging unit for averaging error vectors measured by said measuring unit over a prescribed number of symbols in a frame.

8. The radio reception apparatus according to claim 1, further comprising
an inter-frame averaging unit for averaging error vectors measured by said measuring unit over frames.

9. The radio reception apparatus according to claim 1, wherein said modulation method switching unit notifies switching of the modulation method to a radio apparatus of a partner of communication.

10. A radio reception method in a radio reception apparatus compatible with a plurality of modulation methods having different multi-value numbers, comprising the steps of:

5 measuring an error vector corresponding to a distance between an original symbol point of a received signal and an actually received symbol point on an IQ coordinate plane;

comparing said measured error vector with a prescribed threshold value; and

10 switching the modulation method in accordance with result of comparison by said comparing step.

11. The radio reception method according to claim 10, wherein in said step of switching the modulation method, when a switching request is made during a communication in a first modulation method having a small multi-value number for switching to a second modulation method having a larger multi-value number and it is determined by said
5 comparing step that said measured error vector is not larger than a prescribed first threshold value, the modulation method is switched from said first modulation method to said second modulation method, and when it is determined that said error vector is larger than said first threshold
10 value, said first modulation method is maintained.

12. The radio reception method according to claim 11, wherein

in said measuring step, other parameter for evaluating communication quality of a propagation path is detected in addition to said error vector; and

5 in said modulation method switching step, said first modulation method is maintained when it is determined that said measured error vector is larger than said first threshold value, even when said detected parameter represents a relatively satisfactory communication quality.

13. The radio reception method according to claim 10, wherein
in said step of switching the modulation method, when a request for interrupting communication through a propagation path because of degradation of communication quality is made during a communication in a
5 second modulation method having a large multi-value number and it is determined by said comparing step that said measured error vector is not larger than a prescribed second threshold value, the modulation method is switched from said second modulation method to a first modulation method having smaller multi-value number to maintain communication, and when
10 it is determined that said error vector is larger than said second threshold value, communication through said propagation path is interrupted.

14. The radio reception method according to claim 13, wherein
in said measuring step, other parameter for evaluating communication quality of a propagation path is detected in addition to said error vector; and

5 in said modulation method switching step, communication through the propagation path is interrupted when it is determined that said measured error vector is larger than said second threshold value, even when said detected parameter represents a relatively satisfactory communication quality.

15. The radio reception method according to claim 10, further comprising the step of
performing a process of selecting or synthesizing said received signal;

wherein

5 in said measuring step, said error vector of the received signal that has been subjected to said process of selecting or synthesizing said received signal is measured.

16. The radio reception method according to claim 10, further comprising the step of
averaging error vectors measured in said step of measuring over a prescribed number of symbols in a frame.

17. The radio reception method according to claim 10, further comprising the step of
averaging error vectors measured in said step of measuring over frames.

18. The radio reception method according to claim 10, wherein in said step of switching the modulation method, switching of the modulation method is notified to a radio apparatus of a partner of communication.

19. A radio reception program in a radio reception apparatus compatible with a plurality of modulation methods having different multi-value numbers, to have a computer execute the steps of
measuring an error vector corresponding to a distance between an
5 original symbol point of a received signal and an actually received symbol point on an IQ coordinate plane;
comparing said measured error vector with a prescribed threshold value; and
switching the modulation method in accordance with result of
10 comparison by said comparing step.

20. The radio reception program according to claim 19, wherein in said step of switching the modulation method, when a switching

request is made during a communication in a first modulation method having a small multi-value number for switching to a second modulation method having a larger multi-value number and it is determined by said
5 comparing step that said measured error vector is not larger than a prescribed first threshold value, the modulation method is switched from said first modulation method to said second modulation method, and when it is determined that said error vector is larger than said first threshold
10 value, said first modulation method is maintained.

21. The radio reception program according to claim 20, wherein in said measuring step, other parameter for evaluating communication quality of a propagation path is detected in addition to said error vector; and
5 in said modulation method switching step, said first modulation method is maintained when it is determined that said measured error vector is larger than said first threshold value, even when said detected parameter represents a relatively satisfactory communication quality.

22. The radio reception program according to claim 19, wherein in said step of switching the modulation method, when a request for interrupting communication through a propagation path because of degradation of communication quality is made during a communication in a
5 second modulation method having a large multi-value number and it is determined by said comparing step that said measured error vector is not larger than a prescribed second threshold value, the modulation method is switched from said second modulation method to a first modulation method having smaller multi-value number to maintain communication, and when
10 it is determined that said error vector is larger than said second threshold value, communication through said propagation path is interrupted.

23. The radio reception program according to claim 22, wherein in said measuring step, other parameter for evaluating communication quality of a propagation path is detected in addition to said

error vector; and

- 5 in said modulation method switching step, communication through the propagation path is interrupted when it is determined that said measured error vector is larger than said second threshold value, even when said detected parameter represents a relatively satisfactory communication quality.

24. The radio reception program according to claim 19, to have a computer further execute the step of

performing a process of selecting or synthesizing said received signal; wherein

- 5 in said measuring step, said error vector of the received signal that has been subjected to said process of selecting or synthesizing said received signal is measured.

25. The radio reception program according to claim 19, to have a computer further execute the step of

averaging error vectors measured in said step of measuring over a prescribed number of symbols in a frame.

26. The radio reception program according to claim 19, to have a computer further execute the step of

averaging error vectors measured in said step of measuring over frames.

27. The radio reception program according to claim 19, wherein

in said step of switching the modulation method, switching of the modulation method is notified to a radio apparatus of a partner of communication.